

DERWENT PUBLICATIONS LTD.

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82708 C/47 BASF AG	A97 F09 BADI 23.04.79 *DI 2916-356	A(5-J9, 12-W6C) F(5-A6C).	2
23.04.79-DI-916356 (13.11.80) C08g-59/10 C08g-73/02 Coat r soluble polyether amine prepn. - by reacting di- or poly-amine(s) with chlorohydrin ether(s) of alcohol(s) or glycerol, used for d watering agents for paper		<u>DETAILS</u> Pref. $\geq 35\%$ (II) is condensed with (I) in the absence of water, neutralised, the rest of (II) added and post-condensed in the presence of water pref. at pH > 8 . (I) may be pref. ethylene diamine or the mixts. with diethylene triamine, diaminopropylethylene diamine or triethylene tetramine or propylene diamines. The alcohol in (II) is e.g. propane - or butane diol.	
Water soluble polyetheramines are prepd. by (i) condensing (a) di- or polyamines (I) contg. 2-10N atoms with (b) chlorohydrin ethers (II) (prepd. from 1 mol. divalent 2-5C alcohol, its ethoxylated adduct contg. up to 18 ethylene oxide units, glycerol or polyglycerol contg. up to 15 glycerol units and 2-8 mol. epichlorohydrin), at $110-200^{\circ}\text{C}$ in polar, water miscible solvents in the absence or extensive exclusion of water, (ii) adding an alkali(ne earth) metal base to n utralise $\geq 20\%$ of the HCl formed by the condensn. and (iii) post-condensing. (I) is used in an amt. of 0.6-2.5 mol. per mol. chlorohydrin gp. in (II).		<u>EXAMPLE</u> Ethylene diamine (120 pt.wt.) and glycol (320 pt.wt.) were heated to 85°C and a chlorohydrin ether (318 pt.wt.) prepd. by reacting epichlorohydrin (2565 pt.wt.) with a mixt. of polyethylene glycol (2716 pt.wt.) with a mol.wt. of 200, BF_3 -hydrate (5.4 pt.wt.) and epichlorohydrin (285 pt.wt.) for 4 hrs at 70°C , added over 2 hrs. and reacted for 2 hrs. at $145-155^{\circ}\text{C}$. Two 50% solns. (65 pt.wt.) of the chlorohydrin ether in the glycol was added to the mixt. at an interval of 45 min. and after 45 min. after the last addition, the mixt. was neutralised by adding a concentrated aq. NaOH soln. (116 pt.wt.). The t mp. was decreased to 80°C , water (1090 pt.wt.) add d and then the chlorohydrin ether (270 pt.wt.) and a concentrated NaOH soln. (213 pt.wt.) added to maintain the	
The polyetheramines are used as flocking, retention and dewatering aids in paper prodn. The aids are prepd. without the necessity of having to graft components used during the condensn. with ethylene imine.			

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soln. at a pH of 10-10.5. The soln. (0.03%) was added to newspaper as a dewatering aid and the mixt. beaten at a pH of 6.8, in an Ultraturrax device (RTM). The paper had a grinding degree of 74°SR.(24pp952).

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